

PATENT CLAIMS

1. Moulding composition, comprising

- 5       a)    from 50 to 99.9% by weight of a matrix  
          composed of a thermoplastic polymer and  
      b)    from 0.1 to 50% by weight of a matting agent  
          in the form of a (meth)acrylate copolymer  
          dispersed in the matrix,

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characterized in that

the matting agent is a (meth)acrylate copolymer  
which has been prepared from the following mono-  
15       mers,

- b1)   from 50 to 95% by weight of methyl methacryl-  
          ate  
      b2)   from 5 to 50% by weight of C<sub>1</sub>-C<sub>6</sub>-alkyl acryl-  
20       ates  
      b3)   from 0.01 to less than 0.5% by weight of a  
          crosslinking monomer and/or graft-linking  
          agent having two or more ethylenically  
          unsaturated radicals capable of free-radical  
25       polymerization,  
      b4)   from 0 to 20% by weight of one or more other,  
          non-crosslinking ethylenically unsaturated  
          monomers capable of free-radical polymeriza-  
          tion,

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where the entirety of the constituents b1) and b2)  
and, where appropriate, b3) and/or b4) gives 100%  
by weight, and the glass transition temperature  $T_{mg}$   
of the matting agent is at least 20°C.

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2. Moulding composition according to Claim 1, charac-  
terized in that the matrix a) is composed of a  
polymethyl methacrylate, of an impact-modified  
polymethyl methacrylate, of a polycarbonate, of a

polystyrene, of an acrylate-styrene-acrylonitrile graft copolymer (ASA), of a styrene-acrylonitrile (SAN), of a polyester, of a polyethylene terephthalate (PET), of a glycol-modified polyethylene terephthalate (PETG), of a polybutylene terephthalate plastic (PBT), of a polyvinyl chloride plastic (PVC), of a polyolefin plastic, of a cycloolefin copolymer (COC), of an acrylonitrile-butadiene-styrene (ABS) or of a mixture (blend) of various thermoplastics.

3. Moulding composition according to Claim 1 or 2, characterized in that the matrix a) is an impact-modified polymethyl methacrylate which comprises an impact modifier whose structure has two or three layers.

4. Moulding composition according to one or more of Claims 1 to 3, characterized in that the matrix a) is an impact-modified polymer, composed of:

a1) from 10 to 95% by weight of a coherent hard phase whose glass transition temperature  $T_{mg}$  is above 70°C, composed of

a11) from 80 to 100% by weight (based on a1) of methyl methacrylate and

a12) from 0 to 20% by weight of one or more other ethylenically unsaturated monomers capable of free-radical polymerization, and

a2) from 90 to 5% by weight of a tough phase dispersed within the hard phase and having a glass transition temperature  $T_{mg}$  below -10°C, composed of

- a21) from 50 to 99.5% by weight of a C<sub>1</sub>-C<sub>10</sub>-alkyl acrylate (based on a2)
- a22) from 0.5 to 5% by weight of a crosslinking monomer having two or more ethylenically unsaturated radicals capable of free-radical polymerization, and
- a23) where appropriate, other ethylenically unsaturated monomers capable of free-radical polymerization,
- where at least 15% by weight of the hard phase a1) has covalent linking to the tough phase a2).
5. Moulding composition according to one or more of Claims 1 to 4, characterized in that the matting agent b) is a copolymer composed of
- from 50 to 90% by weight of methyl methacrylate
- from 10 to 50% by weight of ethyl acrylate and/or butyl acrylate
- from 0.01 to 5% by weight of a crosslinking monomer and/or graft-linking agent having two or more ethylenically unsaturated radicals capable of free-radical polymerization.
6. Moulding composition according to one or more of Claims 1 to 4, characterized in that ethylene glycol dimethacrylate is used as crosslinking monomer.
7. Moulding composition according to one or more of Claims 1 to 6, characterized in that the matting agent b) has been prepared via emulsion polymerization, and, prior to incorporation into the matrix, has a median particle radius in the range from 100 nm to 10  $\mu$ m.

8. Moulding composition according to one or more of Claims 1 to 7, characterized in that a test specimen produced therefrom has roughness variables to DIN 4768 in the range  $R_a$  = from 0.1 to 0.5  $\mu\text{m}$ ,  $R_z$  = from 0.5 to 5.0  $\mu\text{m}$  and  $R_{\text{max}}$  = from 0.5 to 5.0  $\mu\text{m}$ .
9. Process for preparing a moulding composition as claimed in one or more of Claims 1 to 8 in a manner known per se via mixing of the matrix and of the matting agent in the molten state in an extruder, discharging and cooling of the extrudate and then pelletizing of the material.
10. Moulding which can be produced in a manner known per se by means of extrusion or injection moulding from a moulding composition according to one or more of Claims 1 to 8.
11. Moulding according to Claim 10, characterized in that it is a film, a flat sheet, a corrugated sheet, a multiple-web sandwich panel, a pipe, a rod or an injection-moulded part of any desired shape.
12. Use of a film produced from the moulding composition according to one or more of Claims 1 to 8 for co-lamination to another, optionally printed film material, for back-moulding with a plastics material, for back-foaming with a plastics foam, for extrusion lamination or for the lamination of any desired substrates.